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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,673	06/30/2003	Phillip J. Brock	HSJ9-2003-0023US1	5373
23980	7590	05/15/2006	EXAMINER	
REED INTELLECTUAL PROPERTY LAW GROUP 1400 PAGE MILL ROAD PALO ALTO, CA 94304-1124			CHEN, TIANJIE	
			ART UNIT	PAPER NUMBER
			2627	

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/611,673

Applicant(s)

BROCK ET AL.

Examiner

Tianjie Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 21-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 19,20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Final Rejection

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai et al (US 2004/0093719) in view of Jamison et al (US 5,475,040).

Dai et al shows a slider assembly in Fig. 2 including a plurality of sliders 18 bonded by a debondable solid encapsulant 14 (Figs. 4-7; [0038], [0042], and [0046]), each slider has a surface 24 that is free from the encapsulant, and the encapsulant-free surfaces are coplanar to each other ([0037]).

Dai et al shows that the encapsulant is comprised of thermoplastics, such as Able Stick conductive Thermal Plastic Film ([0038], lines 7, and 12-14) or other polymers ([0038], lines 20-24), but does not specify styrene and butadiene polymers.

Jamison et al shows a thermoplastic encapsulant, which is comprised of blend of styrene and butadiene polymers (Column5, lines 11) and this encapsulant provides markedly improved performance, i.e. good physical and chemical stability, and are economical (Column 1, lines 17-19) and having improved toughness as comparing with a softer material and improved filling characteristics (comparing with layer 28), which can be seen in Fig.7 since it fills in the voids between 18s. It would have been obvious at the time the invention was made; one of ordinary skill in the art would have

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been motivated to include styrene and butadiene polymers as an encapsulant to obtain good stability.

Claim 2, Dai et al further shows a contiguous planar surface 24 included at least one encapsulant region and containing the coplanar slider surfaces.

Claim 3, Dai et al further shows that the sliders 18 are arranged in an array (Fig. 2).

Claim 4, Dai et al further shows that the array is a rectilinear array (Fig. 2).

Claim 5, Dai et al further shows that the sliders do not contact each other (Fig. 2).

Claim 6, Dai et al further shows that the coplanar surfaces of the sliders are each an air-bearing surface ([0037], lines 7-8).

Claims 7 and 8, Dai et al further shows a substrate 30+28 in contact with the air-bearing surfaces; substrate is comprised of a laminate of a flexible tape 28 and an adhesive, wherein the adhesive is in contact with the air-bearing surfaces ([0037] lines 7-10).

Claim 9, Dai et al further shows that the slider assembly of claim 8, wherein the adhesive is a pressure sensitive adhesive ([0039], lines 26-31).

Claim 10, Dai et al further shows that the adhesive the tape 28 over the air bearing surfaces 24.

Claim 11, Dai et al further shows that the encapsulant does not substantially outgas under vacuum since there is no bubble ([0039], lines 28-32).

Claim 12, Dai et al further shows a carrier 12 ([0038], line 1) attached to the encapsulant, wherein the carrier does not cover any of the coplanar slider surfaces.

Claim 13. Dai et al further shows a resist layer 14 on the air-bearing surfaces ([0041], lines 11-12), wherein the encapsulant is mechanically stable upon exposure to the resist layer or any component thereof.

Claims 14, Dai et al further shows that the encapsulant is subject to solvation by a solvent not found in the resist layer ([0042]).

2. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dai et al in view of Jamison et al as applied to claims 4 and 6 above, and further in view of AAPA (Applicant admitted Prior Art).

Claims 15-18, AAPA shows in [0076] that a variety of low molecular weight hydrogenated styrene copolymers available from either ExxonMobile chemical company (Houston, Texas) or Arakawa Forest Chemical Industries, Ltd. Corporation (Osaka, Japan) have been studied. These materials are amorphous, soluble in nonpolar solvents and are available with softening points ranging from 70-150°C, preferably at least 130°C.

Dai et al and Jamison uses styrene encapsulant but does not specify the material. AAPA shows a commercial available material. It would have been obvious at the time the invention was made one of ordinary skill in the art would have been motivated to use the commercially available material. In thus constructed device, the solvent is comprised of a nonpolar solvent; the styrene polymer is a hydrogenated styrene copolymer, thee hydrogenated styrene copolymer has a softening temperature of about 70° C to about 150° C, the softening temperature is at least about 130° C.

Note: APPA teaches away from these features. The reason is not clear why Applicant recites these features as his invention.

Allowable Subject Matter

3. Claims 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

- Claim 19 and 20, as the closest reference, Mees et al (US 3,970,723) shows an encapsulant with styrene and butadiene polymers, wherein the weight ratio is given as 10-34:100 (Abstract); but fails to show a weight ratio of about 19:1 to about 17:3; or about 9:1.
- Applicant states in [0078] that blends containing styrene and butadiene polymers in a weight ratio of about 19:1 to about 17:3 exhibited markedly improved performance. Another preferred weight ratio is about 9:1.

Response to Arguments

4. Applicant's arguments filed 05/03/2006 have been fully considered but they are not persuasive. Applicant amended claim 1 by adding some relative features, but does not specify what material are these features to be compared. Therefore, these added features do not cure the problem.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571-272-7570. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


TIANJIE CHEN
PRIMARY EXAMINER